

ELECTROMAGNETICS / LOW OBSERVABLES



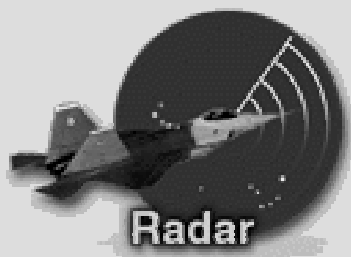
Vittal Pyati

Professor

PhD, University of Michigan, 1966

- Electromagnetics
- Radar
- Low observables
- Electronic warfare

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The Low Observables program is designed to meet the needs of an Air Force officer working in the area of observables reduction technology. One of the primary objectives of the program is to develop an ability to apply low observables technology to aircraft in the current and future Air Force inventory. The current high interest in aircraft that use low observables technology, especially reduced radar cross-section (RCS) places an emphasis on electromagnetic field theory. The growing importance of optical detection techniques underscores the need for an in-depth knowledge of electro-optics.

A recent thesis examined the impact of wing flex on the Dark Star signature



To supplement the course work in this area, a substantial amount of laboratory work is included, providing the student with an appreciation for the practical aspects of electro-magnetic scattering and infrared signature phenomena.



Facilities

The AFIT Advanced Technology Laboratories give the student a unique opportunity to put classroom theory into practice.

AFIT's RCS range provides a unique research tool capable of measuring targets down to -60 dBsm over a 6 to 18 GHz band.

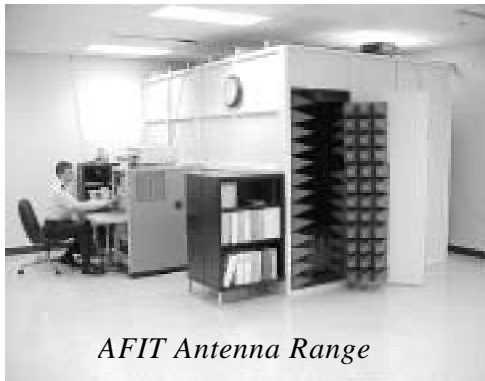


*F-117A model in
AFIT's RCS range*

AFIT's network analyzer

Based antenna range is

capable of calibrated gain measurements over a 2 to 18 Hz



AFIT Antenna Range

band. A variety of test fixtures allow our students to measure all major antenna types including aperture, surface, and array antennas.

The optical observable laboratory provides the student access to state-of-the-art electro-optic equipment including a 10 W pulsed YAG laser radar, spectral radiometer, and broadband thermal imager.



Laser Cross-section Range



Andrew Terzuoli

Associate Professor

PhD, The Ohio State University, 1982

- Antennas & electromagnetics
- Remote sensing
- Low observable (stealth)
- Wave scattering

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